

THAT WHICH IS CLAIMED:

1. A hydrogen storage material comprising a complex hydride selected from the group consisting of hydrides having the formula of $M_y(BH_{4+z})_x$ where M is a transition metal or boron, B is aluminum or boron, X has a value between 1 and 4, Y has a value of between 1 and 6; and Z has a value of 0 or 2; and,

a dopant selected from the group consisting of metals comprising titanium, zirconium, vanadium, iron, cobalt, nickel, lanthanum, and mixtures thereof;

wherein said complex hydride and said dopant is combined under heat and pressure to form a fused product having a hydrogen release point at normal atmosphere of between about 50°C to about 90°C.

2. The hydrogen storage material according to claim 1 wherein said dopant further comprises titanium butoxide.

3. A process of forming a hydrogen storage material comprising:

supplying a complex hydride selected from the group consisting of hydrides having the formula of $M_y(BH_{4+z})_x$ where M is a transition metal or boron, X has a value between 1 and 4, Y has a value of between 1 and 6; and Z has a value of 0 or 2;

mixing with said complex hydride a dopant selected from the group consisting of metals comprising titanium, zirconium, vanadium, iron, cobalt, nickel, lanthanum, and mixtures thereof;

placing said complex hydride and said dopant under pressure in the presence of hydrogen gas;

raising the temperature of said complex hydride, said dopant and said hydrogen gas to a melting point of said complex hydride; and

maintaining said heat and pressure for a time sufficient to form a fused product, wherein said fused product has a reversible ability to store and release hydrogen.